IMPROVED CEILING HINGE ASSEMBLY

FIELD OF THE INVENTION

The present invention relates to an improved ceiling hinge assembly, more particular to an improved single-axle ceiling hinge assembly that makes the installation easier.

BACKGROUND OF THE INVENTION

If a glass door is built, most constructions usually adopt floor hinges as building materials in order to save time and effort for the construction. However, a dark chamber must to be installed at the floor of the construction before such construction is taken place. When the floor hinge is in use, the floor hinge has to keep a gap between the door and the floor. Therefore, an airtight strap is usually used to improve the situation of such gap. If we have to clean the floor, the airtight gap cannot stop the dirty water from flowing. If such hinge is used for a glass door, it is necessary to install a set of metallic bracket onto both upper and lower edges of the glass door before installing the hinge to facilitate fixing the glass door in a fixed position.

The feature of a frameless glass door resides on its good heat and sound insulation, but its pivotal connection is done by installing the floor hinge between the glass door and the frame. Therefore, there is a gap between the door and the floor, which will reduce the heat and sound insulation effect. The U.S. Patent No. 5,077,864 disclosed a hinge installed on the side of

a door, and the design of such hinge is divided into two sections; one section is fixed onto the door frame, and the other section is connected to the door panel, and the two sections of the hinge are pivotally coupled. The hinge is lubricated when needed to avoid rusting, and the rust makes the door uneasy to open. Furthermore, the installation of the hinge requires precision that may be affected by human factors. Therefore, it is necessary to adjust the hinge and the door, which may cause the correction and adjustment problems.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to improve conventional ceiling hinges that are uneasy to install and poor at its sealing function, and improve the ceiling hinge structure to provide a more convenient way of installing the hinge. The present invention relates to a single-axle design, comprising a base and a rotary rod coupled to the base, and the head of the rotary rod is designed as a connecting groove, which is coupled to the connecting axle of the base. Adjustment along the vertical direction can be made by rotating a screw on the rotary rod. The body of the rotary rod has a plurality of holes for connecting the door panel by fixtures.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective diagram of the hinge assembly according to a preferred embodiment of the present invention.

FIG. 2 is a perspective diagram of the disassembled parts of the hinge assembly of a preferred embodiment of the present invention.

FIG. 3 is an illustrative diagram of the structure according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please refer to FIG. 1 for the installation of the hinge to a door panel (such as a glass door 4) according to a preferred embodiment of this invention. The ceiling hinge installed at the top of the glass door 4 comprises a base 1 and a rod head 20 of a rotary rod 2, such that when the glass door 4 is rotated, the rotary rod 2 of the hinge according to a preferred embodiment of this invention. The rod head 20 of the rotary rod 2 has a connecting groove 201, and such connecting groove 201 is a square groove, and a long groove of the same size is disposed around each of the four sides of the grooves. A plurality of screw holes 202 disposed on the sides of the rod head 20 for fixing and adjusting the connecting axle 10 of the base 1 and the connecting groove 201 by screwing a screw 203 to fix the connecting axle 10. The connecting axle 10 is a cylinder having a flange coupled to each of the four sides of the cylinder, and the groove of the connecting groove 201 is larger

than the cylinder of the connecting axle 10. The rod head 20 of the rotary rod 2 can be adjusted by tightening the screw 203 in order to make a vertical adjustment to the rotary rod 2 that will make the installation of the door panel much easier. A plurality of the holes 211 is disposed on the rod body 21, and the fixture 3 in this preferred embodiment adopts a screw rod 31 as the fixture 3. Further, a primary cushion 311 and a secondary cushion 312 are added to the contact section of the screw rod 31 and the glass door 4 to prevent the collision of the screw rod 31 and the glass door 4. Since glass is a fragile material, and if the glass material has defects, a slight collision will turn the defect into a big one. To avoid the occurrence of such situation and the collision between the rotary rod 2 and the glass door 4, the contact surface 204 between the rod head 20 of the rotary rod 2 and the glass door 4 is designed, in addition to the primary cushion 311 and secondary cushion 312.

Please refer to FIG. 3, the improved hinge assembly in accordance with this invention can prevent itself from being loosened, and its installation is easy and can be used to adjust the door panel (such as a glass door 4). In the top of the door panel (Such as a glass door 4), there is the base 1 be settled. The rotary rod 2 is connected to the base and the door. In the bottom of the door panel corresponding to the rotary rod 2, there is a supporting rod 5. It can also save a plastic cup or

metallic bracket for installing onto a glass door 4 or window by directly connecting the rotary rod 2 and the glass door 4.